

Dear Sir:

In response to the Office Action dated January 31, 2002, the specification and claims are amended as set forth below.

**In the Specification:**

Please amend the paragraph beginning at page 1, line 4 as follows:

This is a continuation-in-part of Serial No. 09/760,194 filed January 12, 2001 which, in turn, claims priority from and replaces Provisional application Serial No. 60/249,685, filed November 17, 2000.

Please amend the paragraph beginning at page 11, line 13 as follows:

The controls are in a compartment 87 at the front of the oven which is cooled by fans seen in Fig. 8.

**In the Claims:**

Amend Claim 1 as follows:

1 (Amended). A conveyor oven control comprising an energy management system for controlling a flowing stream of hot air through an oven for baking a food product; a conveyor extending through said cavity for conveying said food product through said oven; a fuel gas line for conveying fuel gas from a source to a burner in said oven; said energy management system being interposed in said fuel gas line and between said source and said burner for controlling a flow of fuel gas to said burner; said energy management system comprising a controller, a signal conditioner, a fuel gas valve, and an ignition module; a safety shut down valve associated with said ignition module to prevent said ignition module from re-igniting said burner during

hazardous conditions; a pair of sensors in said oven for sensing instantaneous oven temperatures; said controller being responsive to said sensed temperatures for controlling said energy management system to regulate operation of said fuel gas valve and, thereby, the flow of fuel gas to the burner in order to maintain oven temperature within a predetermined range, said signal conditioner being responsive to said controller for providing signals that control said fuel gas valve; and a pair of transformers, one transformer being coupled to energize said signal conditioner and the other transformer being coupled to energize said signal ignition module to prevent an electrical feed back which might otherwise defeat the safety shut down valve.

*03*  
Amend Claim 2 as follows:

2 (Amended). The conveyor oven of claim 1 wherein said fuel gas valve comprises a diaphragm closing a chamber having an internal pressure controlled by fluctuations of oven temperatures, a main valve in said fuel gas valve coupled to move with said diaphragm for regulating an amount of fuel gas flowing from said source through said fuel gas line to said burner in response to movement of said diaphragm, and a tap line for applying said pressure in said chamber acting on said diaphragm in response to said sensors whereby the flow of said fuel gas through said main valve in said fuel gas valve to said burner is regulated as a function of said instantaneous oven temperature.

Amend Claim 3 as follows:

3 (Amended). The conveyor oven of claim 2 and a by-pass line for enabling a limited amount of fuel gas to flow around said main valve of said fuel gas valve whereby said burner continues to burn and does not shut down while said main valve is closed.

E Amend Claim 4 as follows:

4 (Amended). The conveyor oven of claim 1 wherein said burner heats air in a plenum at an input end of said oven from which hot air is driven through said cavity, said sensors being located at different places in a plenum.

A Amend Claim 5 as follows:

AB 5 (Amended). A conveyor oven for automatically baking a food product over a timed period under the control of an energy management system, said oven comprising a cavity having a burner associated therewith for providing heated air in said cavity, a fuel gas line for delivering fuel gas to said burner via said energy management system, said burner heating air in a plenum, a system for delivering said stream of heated air from said plenum through said cavity and returning at least a portion of said stream to said plenum, a pair of sensors at different locations in said plenum for sensing an instantaneous temperature of said heated air in said plenum, a valve for modulating the fuel gas delivered to said burner responsive to said sensed instantaneous oven temperature, said delivered fuel gas comprising at least a minimum amount of fuel gas so that said burner means remains in continuous operation regardless of said modulation of fuel gas delivered to said burner, a controller responsive to said sensors for providing signals for regulating said fuel gas valve, a signal conditioner, and an ignition module, said signal conditioner converting said signals provided by said controller into control signals for operating said fuel gas modulating valve, and a pair of transformers, one transformer being coupled to energize said signal conditioner and the other transformer being coupled to energize said ignition module to prevent an electrical feedback between said signal conditioner and said ignition module.

*[Signature]*

*[Signature]*

E Amend Claim 6 as follows:

6 (Amended). The oven of claim 5 and a conveyor for delivering a food product through said cavity over a timed period during which said burner continuously delivers heat to said cavity, said heat baking said product as it is conveyed through said oven, and a line for bypassing said minimum amount of fuel gas around said fuel gas modulating valve in order to prevent said burner means from shutting down during periods while said controller is not calling for heat.

*Control  
P3*

C Cancel Claim 7.

A Amend Claim 8 as follows:

8 (Amended). An energy management system for a conveyor oven that bakes a food product during a passage through said oven, said energy management system delivering a flowing stream of hot air from a burner and over said food product during said passage and comprising a fuel gas valve, a controller for sensing and regulating the temperature of said stream of hot air, a signal conditioner responsive to said controller for producing signals required to operate said fuel gas valve, an ignition module, and a pair of transformers, one of said transformers delivering power to said signal conditioner, and the other of said transformers delivering power to said ignition module to prevent an electrical feed back signal between them.

*AK*

C Cancel Claim 9.

*Sub*  
*B1*  
*AS*

Amend Claim 10 as follows:

10 (Amended). The system of claim 9 wherein said fuel gas valve has a pressure chamber closed by a diaphragm which expands and contracts in response to the pressure in said chamber, said pressure increasing and decreasing in said chamber jointly responsive to said controller and said signal conditioner as a function of the temperature of said stream of hot air, a fuel gas line, and a main valve in said fuel gas line, said main valve being connected to said diaphragm whereby said main valve opens and closes as said diaphragm expands and contracts in order to modulate a flow of fuel gas in said line.

Amend Claim 11 as follows:

11 (Amended). The system of claim 10 and a by-pass line around said main valve, said bypass line delivering enough fuel gas to continuously maintain said burner in at least a minimum heat condition despite operation of said main valve responsive to said diaphragm.

Amend Claim 12 as follows:

12 (Amended). A conveyor oven comprising a modulating fuel gas valve for supplying heat to said oven; a controller; a signal conditioner for converting signals from said controller into signals for operating said fuel gas modulating valve; an on/off safety valve in said fuel gas line to automatically shut down said oven during predetermined conditions; an ignition module for igniting fuel gas delivered by said safety valve; and an electrical control circuit for operating said fuel gas modulating valve, controller, conditioner, and ignition module, said circuit having a first section relating to mechanical parts of the oven and a second section relating to energy management of heat delivery in said oven, and said electrical control circuit having electrical

isolation for preventing a feed back of electrical signals which might prevent shut down of said safety valve during said predetermined conditions;

wherein said second section includes first and second transformers coupled in parallel to provide said isolation between their secondary windings, one of said secondary windings supplying power to said signal conditioner and the other of said secondary windings supplying power to said ignition module, said safety valve being coupled to supply fuel gas via said ignition module.

*Cancel*  
Cancel Claim 13.

*Amend*  
Amend Claim 14 as follows:

*14* (Amended). The oven of claim *12*, and a pair of sensors for detecting heat in said oven, said sensors being coupled to drive said controller, said signal conditioner being coupled to operate said fuel gas modulating valve, and a coupling from said controller to conditioner whereby heat detected by said sensors controls said fuel gas modulating valve.